

Abstract

The Effect of Metformin on the Metabolic Parameters in Polycystic Ovarian Syndrome

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Objectives:

To determine the effects of three months of metformin therapy on clinical and biochemical parameters in polycystic ovary syndrome (PCOS).

Methods:

A total of 40 women with PCOS were recruited in this study. Baseline characteristics (menstrual history, hirsutism scoring (Ferriman Gallwey score), weight, body mass index (BMI), serum luteinizing hormone and follicle-stimulating hormone (LH:FSH) ratio, fasting glucose and fasting lipid profiles were assessed at pre and 3-months post metformin therapy.

Results:

Out of 40 recruited PCOS women, five of them were unexpectedly pregnant after the initial sampling. The menstrual cyclicity was strikingly improved with 68% of the women achieved regular menses. Overall, there were significant reduction in BMI ($p=0.0001$), weight ($p=0.0001$) and FG score ($p=0.001$). Biochemically, a significant improvement was seen in mean fasting blood glucose ($p=0.002$), total cholesterol ($p=0.0001$), LDL ($p=0.003$) and LH level ($P=0.015$). The HDL and triglycerides levels were improved, but not statistically significant ($p>0.05$). Further correlation test between post-treatment weight reduction and menstrual regularity and biochemical profiles found that weight reduction statistically improved the menstrual cyclicity. There was no significant improvement observed in median values for metabolic parameters with weight reduction. Women with and those who have achieved regular menses had significantly lower level of luteinizing hormone ($P=0.044$).

Conclusion:

Three months of metformin therapy improved menstrual cyclicity, body weight, body mass index (BMI) and Ferriman Gallwey score in women with PCOS. It also resulted in an improvement in fasting glucose and lipid profile.